

### ***REASONS FOR ALLOWANCE***

1. The amendment filed 2/17/2010 has been entered. Claims 3-4, 19, 24 have been cancelled. Claims 1-2, 5-11, 12-18, 20, 21-22, 23, 25, 26-27, and 28 are pending in this Office action.

#### ***Allowable Subject Matter***

2. Claims 1-2, 5-11, 12-18, 20, 21-22, 23, 25, 26-27, and 28 are allowed.

3. The following is a statement of reasons for the indication of allowable subject matter: none of the prior art discloses or suggests a signal processing apparatus comprising: a processing device configured to iteratively decode each of the plurality of symbols contained in the composite signal, wherein the composite signal is represented, at least in a part, by a channel gain matrix, wherein the processing device is further configured perform a decomposition of the channel gain matrix into an orthogonal matrix  $Q$  and a triangular matrix  $R$ , and wherein the plurality of symbols are decoded within a constrained enumeration formalism of the triangular matrix  $R$ ; enumerating to determine probabilities of a given symbol being transmitted from a given transmission element of the plurality of transmission elements using a constrained data sub-set of the triangular  $R$  matrix; and making a hard decision about which is the most probable symbol to have been transmitted from the given transmission element so as to reduce a number of enumerations required to carry out a further probability calculation.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHAI TRAN whose telephone number is (571)272-3019. The examiner can normally be reached on 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KHAI TRAN/  
Primary Examiner, Art Unit 2611

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